## (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 6 May 2005 (06.05.2005)

**PCT** 

## (10) International Publication Number WO 2005/040874 A3

(51) International Patent Classification7:

G02B 6/12

(21) International Application Number:

PCT/GB2004/004334

(22) International Filing Date: 11 October 2004 (11.10.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0323922.5

11 October 2003 (11.10.2003)

- (71) Applicant (for all designated States except US): ASTON UNIVERSITY [GB/GB]; Department of Electronic Engineering, Aston Triangle, Birmingham B4 7ET (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): KHRUSCHEV, Igor [GB/GB]; Aston University, Department of Electronic Engineering, Aston Triangle, Birmingham B4 7ET (GB). OKHRIMCHUCK, Andrei [RU/GB]; Aston University, Department of Electronic Engineering, Aston Triangle, Birmingham B4 7ET (GB). SHESTAKOV, Alexander [RU/GB]; Aston University, Department of Electronic Engineering, Aston Triangle, Birmingham B4 7ET (GB). DUBOV, Mykhaylo [UA/GB]; Aston University, Department of Electronic Engineering, Aston Triangle, Birmingham B4 7ET (GB). BENNION, Ian [GB/GB]; Aston University, Department of Electronic Engineering, Aston Triangle, Birmingham B4 7ET (GB).

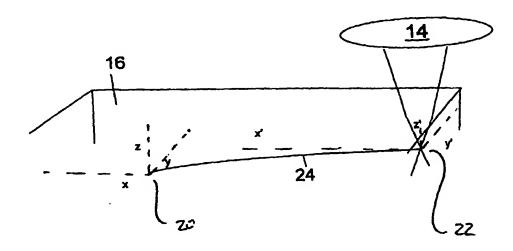
- (74) Agents: BARNFATHER, Karl et al.; Withers & Rogers, Goldings House, 2 Hays lane, London, SE1 2HW (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 16 June 2005

[Continued on next page]

(54) Title: LASER INSCRIPTION OF OPTICAL STRUCTURES IN CRYSTALS



(57) Abstract: A method of altering the refractive index of a region of a crystal comprising focusing a pulsed laser beam at a desired position within the crystal and moving the focused beam along a path such that the focussed beam alters the refractive index of the region of the crystal along the path.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.